

Adapting to Shrinking Andean Glaciers.

Science, Policy and Society in Power Games

Elma MONTAÑA

Director, Science Programs

Inter American Institute for Global Change Research

emontana@dir.iai.int



Invitation

...to policy makers, stakeholders, scientists and science funding agencies

...to rethink their view of the science-policy interface in favor of glaciers protection

➡ There are many strategies (all adds up) and no recipes

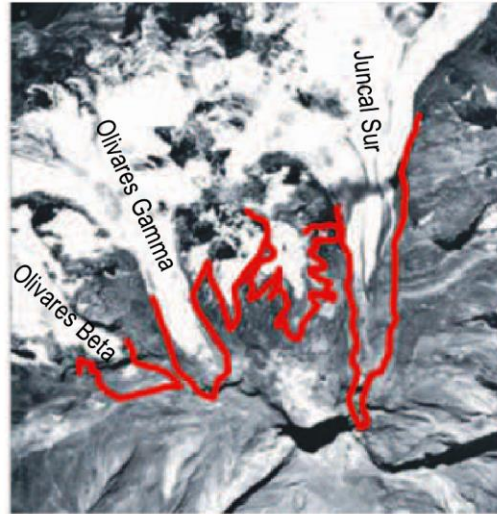
➡ Decision making is a turbulent social process marked by power struggles

➡ Scientists are one actor among many others with sometimes conflicting interests

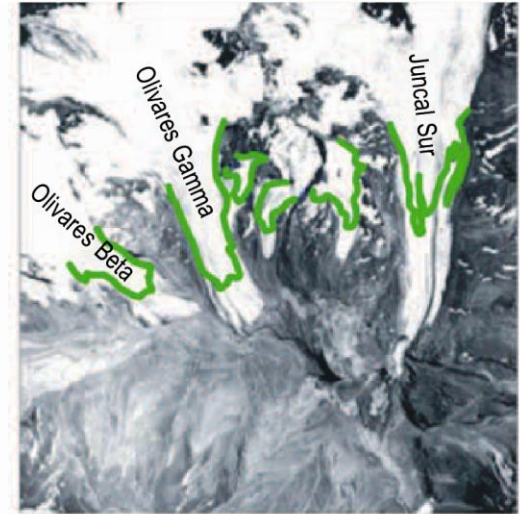
➡ Science-policy is much more than providing evidence

Andeans Glaciers are Shrinking

Juncal Sur, Glacier
Central Andes,
Argentina-Chile

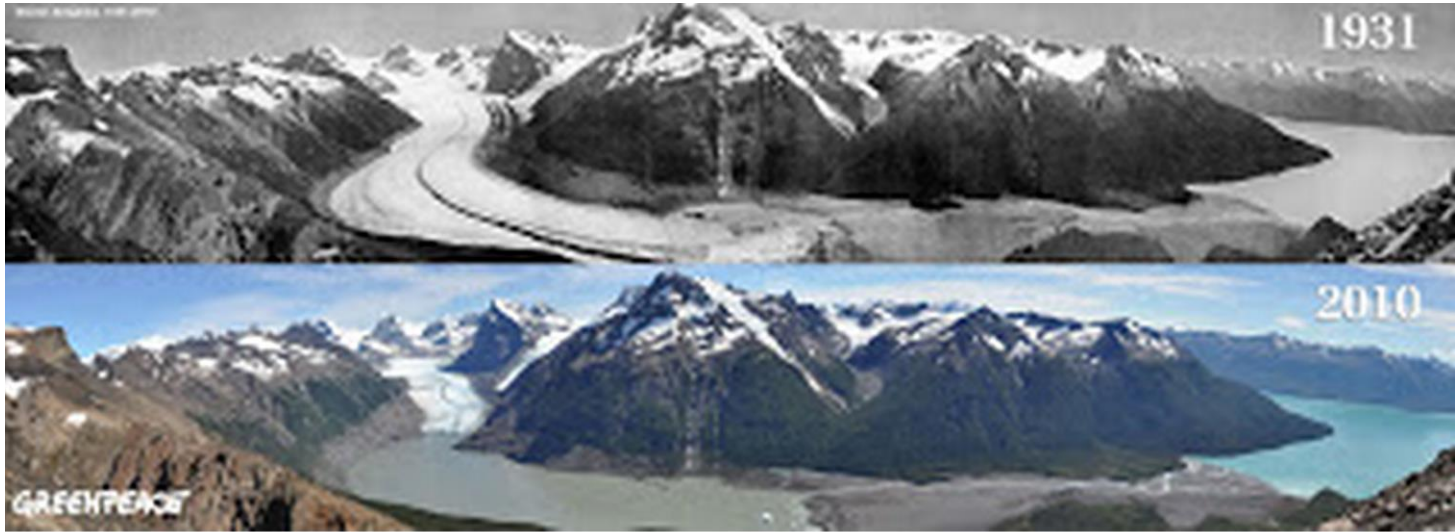


Fotografía Aérea 1997



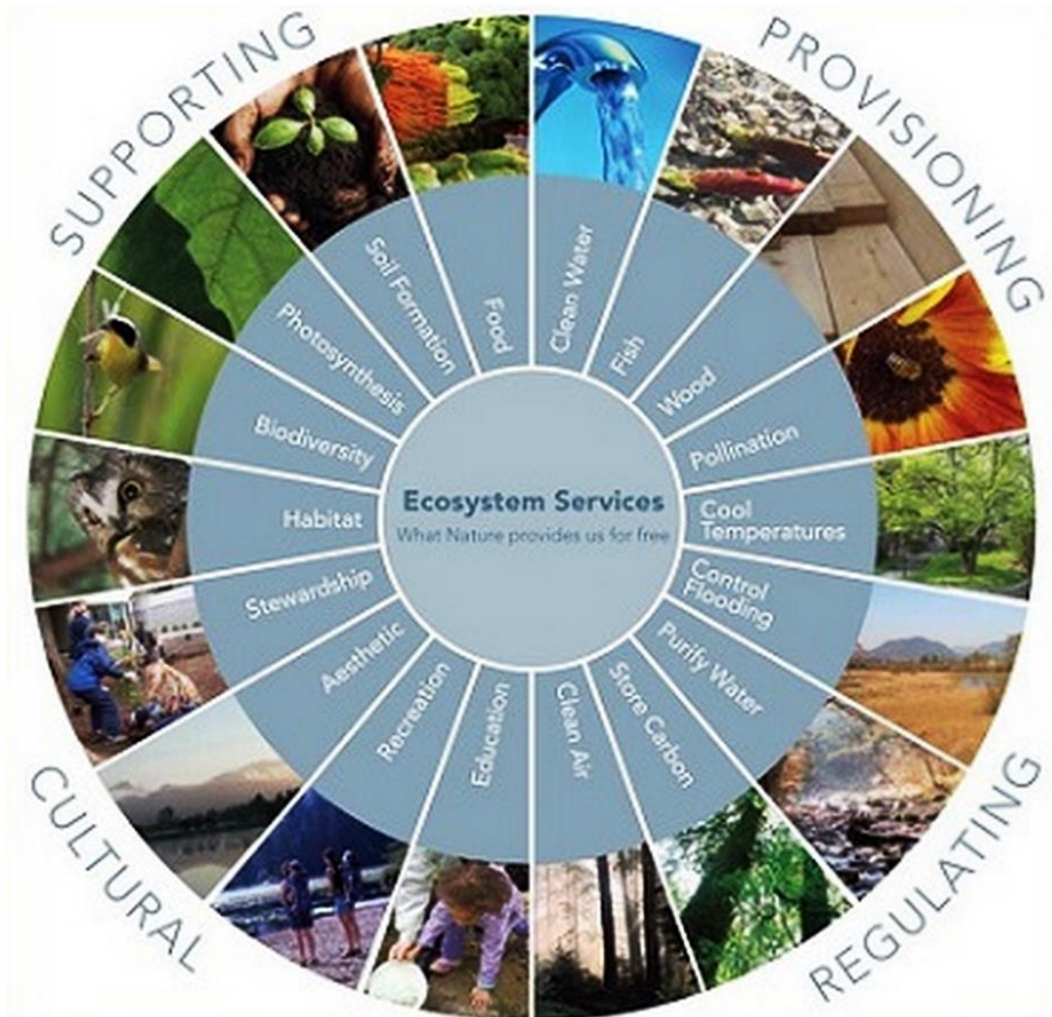
Fotografía Aérea 1955

Ameghino
Glacier
Los Glaciares
National Park,
Argentina



The Value of Glaciers

Ecosystem services: The benefits people obtain from ecosystems.



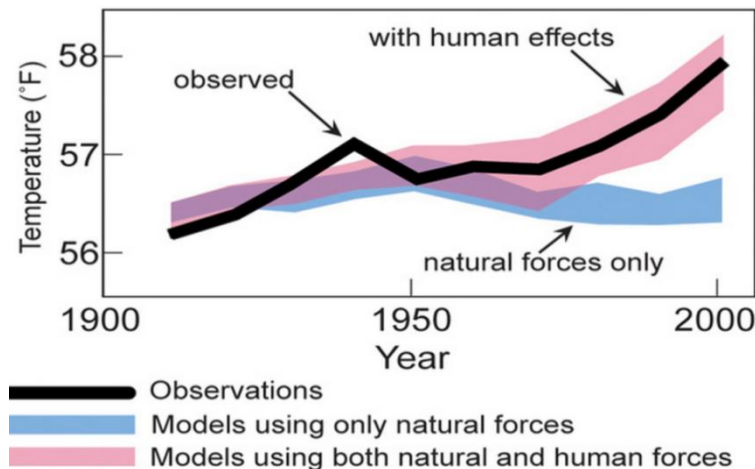
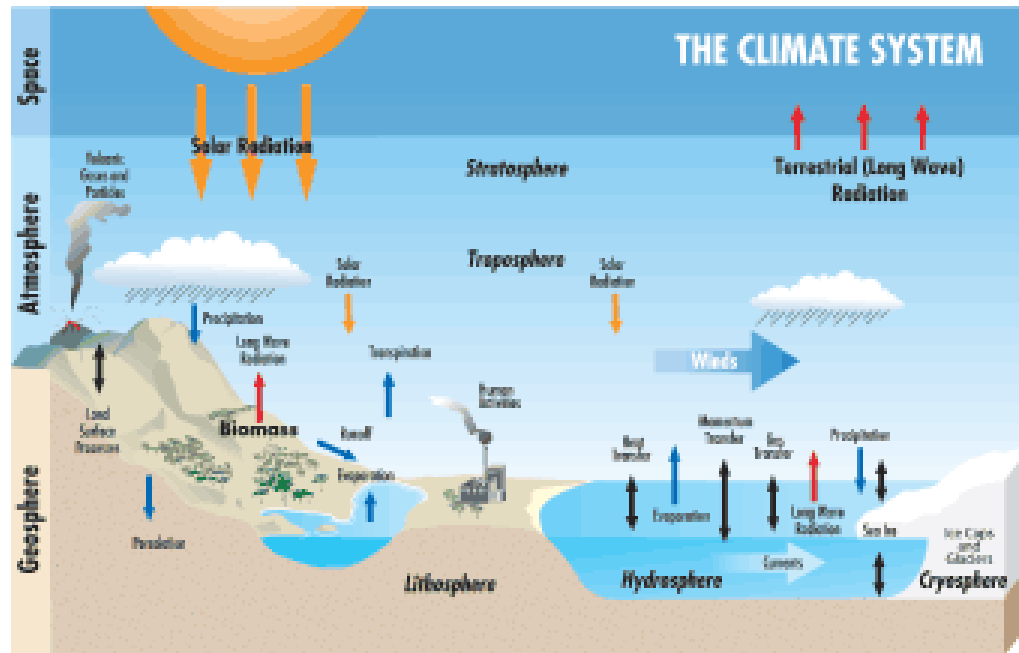
Provisioning of water

Regulation of water runoffs
(« glaciers compensating effect »)

Contribution to aesthetic landscapes

Cultural value for traditional cultures

Threats to Glaciers, global



Threats to Glaciers, local

Prospection and evaluation of sites: land clearance, roads, traffic, particulate matter deposits

Exploration drilling: heavy platforms and machinery

Exploitation: material removed, roads, traffic, particulate matter deposits



Mining

Invasive tourism Infrastructures



Approaches to Glacier Conservation

Natural Parks

Preservation of ecosystems + sustainable development:
Conservation + low impact activities for subsistence of local communities

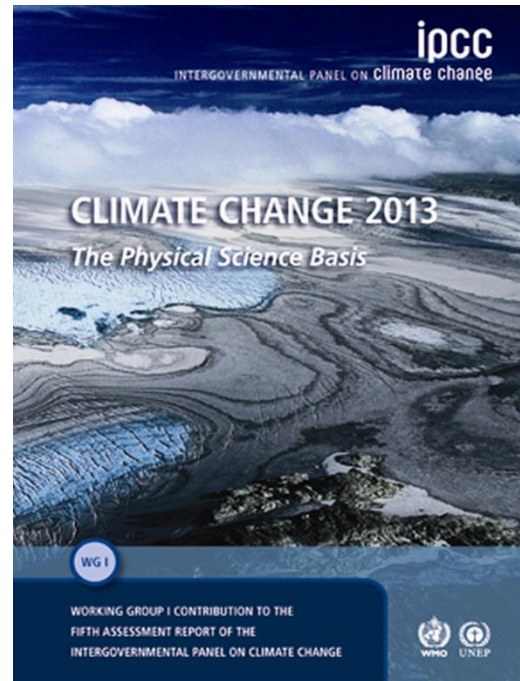
Limited to selected areas

Most glaciers are outside parks

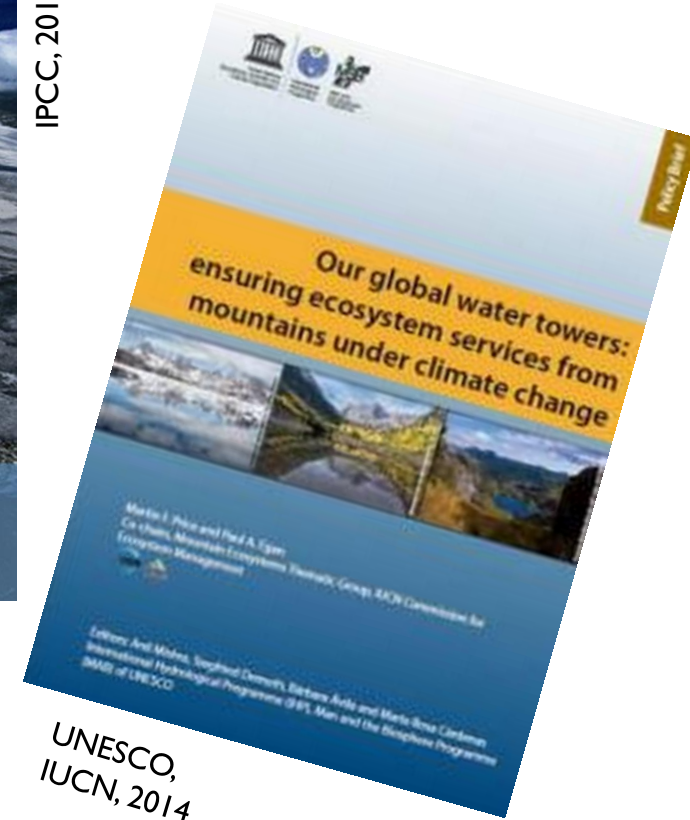


Approaches to Glacier Conservation

Raising global Awareness



IPCC, 2013



UNESCO,
IUCN, 2014



The Impact of Glacier Retreat in the Andes:
International Multidisciplinary Network for Adaptation Strategies

Approaches to Glacier Conservation

Sub-regional initiatives

Proyecto de Adaptación al Impacto del Retroceso Acelerado de Glaciares en los Andes Tropicales

EL PRAA



OBJETIVO GENERAL

Contribuir en el mejoramiento de la capacidad natural que tienen los ecosistemas alto andinos de almacenar agua y regular los balances hidrológicos de las cuencas; y, en el fortalecimiento de la economía de las poblaciones locales, ante los impactos del cambio climático y el retroceso de los glaciares, a través de la ejecución de actividades clave – medidas PILOTO.



COMUNIDAD ANDINA

Bolivia • Colombia • Ecuador • Perú

**FORO INTERNACIONAL
GLACIARES**

Retos de la investigación al servicio de la sociedad en el marco del cambio climático.



CONDESAN
Consortio para el Desarrollo Sostenible
de la Ecorregión Andina



The Impact of Glacier Retreat in the Andes:
International Multidisciplinary Network for Adaptation Strategies



Approaches to Glacier Conservation

The Legal Approach



Law passed in 2008

Law vetoed by president Cristina Kirchner
Heated discussions, “political casualties”

New law 26,639 passed in 2010

➔ Problems in implementing the
“Inventory of Glaciers”

➔ Disputes anticipated when identifying
glaciers and periglacial landforms that
act as water reserves

➔ Sub-national provinces resist the
application of the law

Approaches to Glacier Conservation

The Legal Approach



Social conflict, roads blockages

Law 7722 (Mendoza) passed in 2007

2010. Cyanide technology banned in EU



- ➔ High voltage environmental activism
- ➔ A “negative law”
- ➔ Disputes every time there is an attempt to revoke the law

Approaches to Glacier Conservation

The Legal Approach



- 2006. First draft of glaciers law (Pascua Lama)
- 2007. Law draft filed
- 2014. New text
- 2015. Counterproposal from the executive branch

Argentinean precedent, but in a different context

Entrenched positions, difficult to reconcile.
Power games exposed.

Changes in the Chilean political and economic context

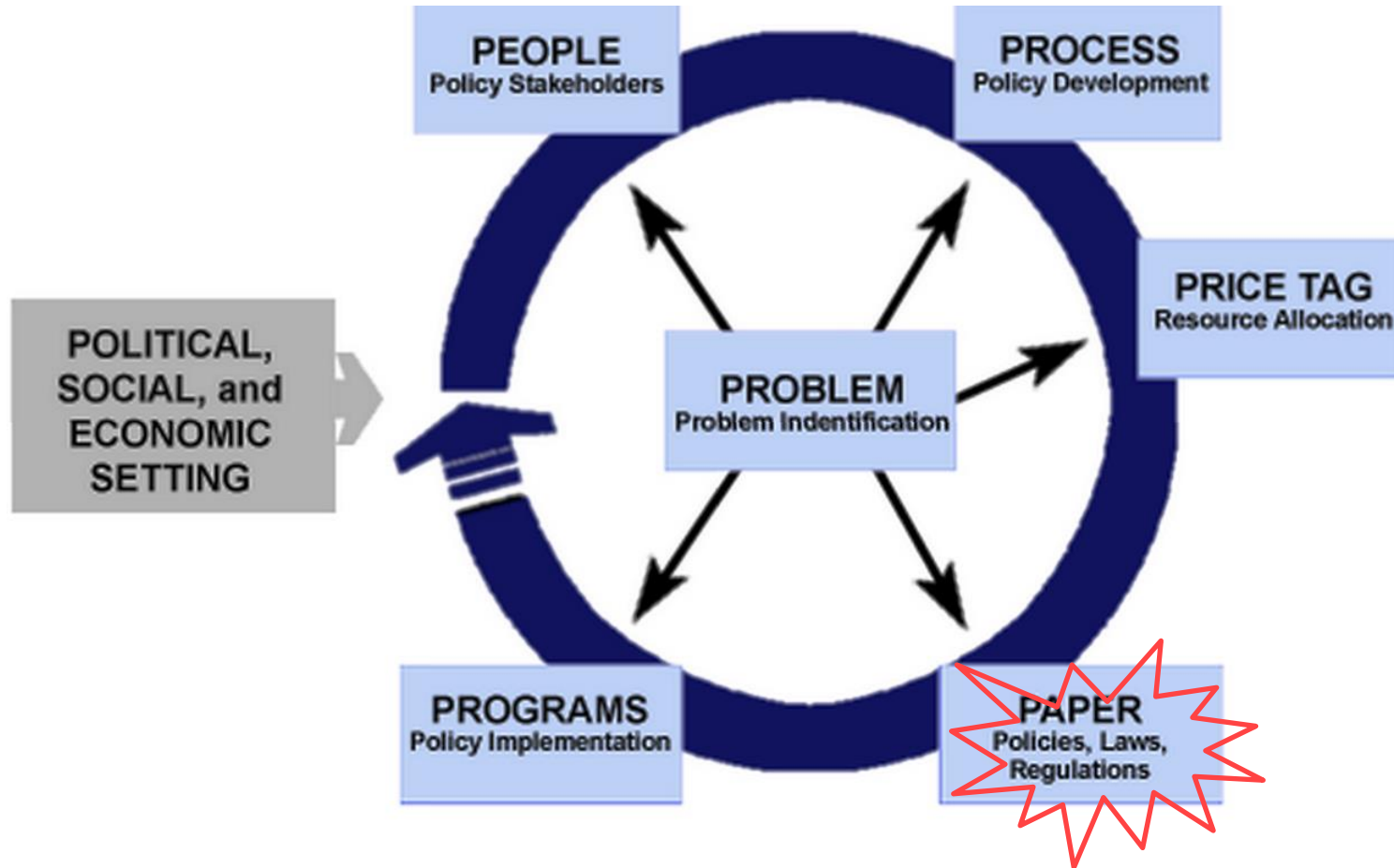
Risks of a “bad law” (bad for whom?)

Role of science?



Approaches to Glacier Conservation

From Law to Policy



Approaches to Glacier Conservation

Social License

Gaining the Social License



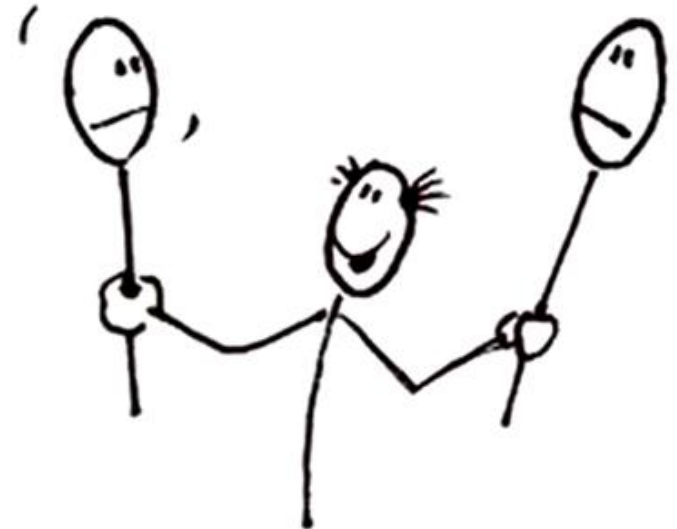
© On Common Ground Consultants Inc 2003

Nice objectives

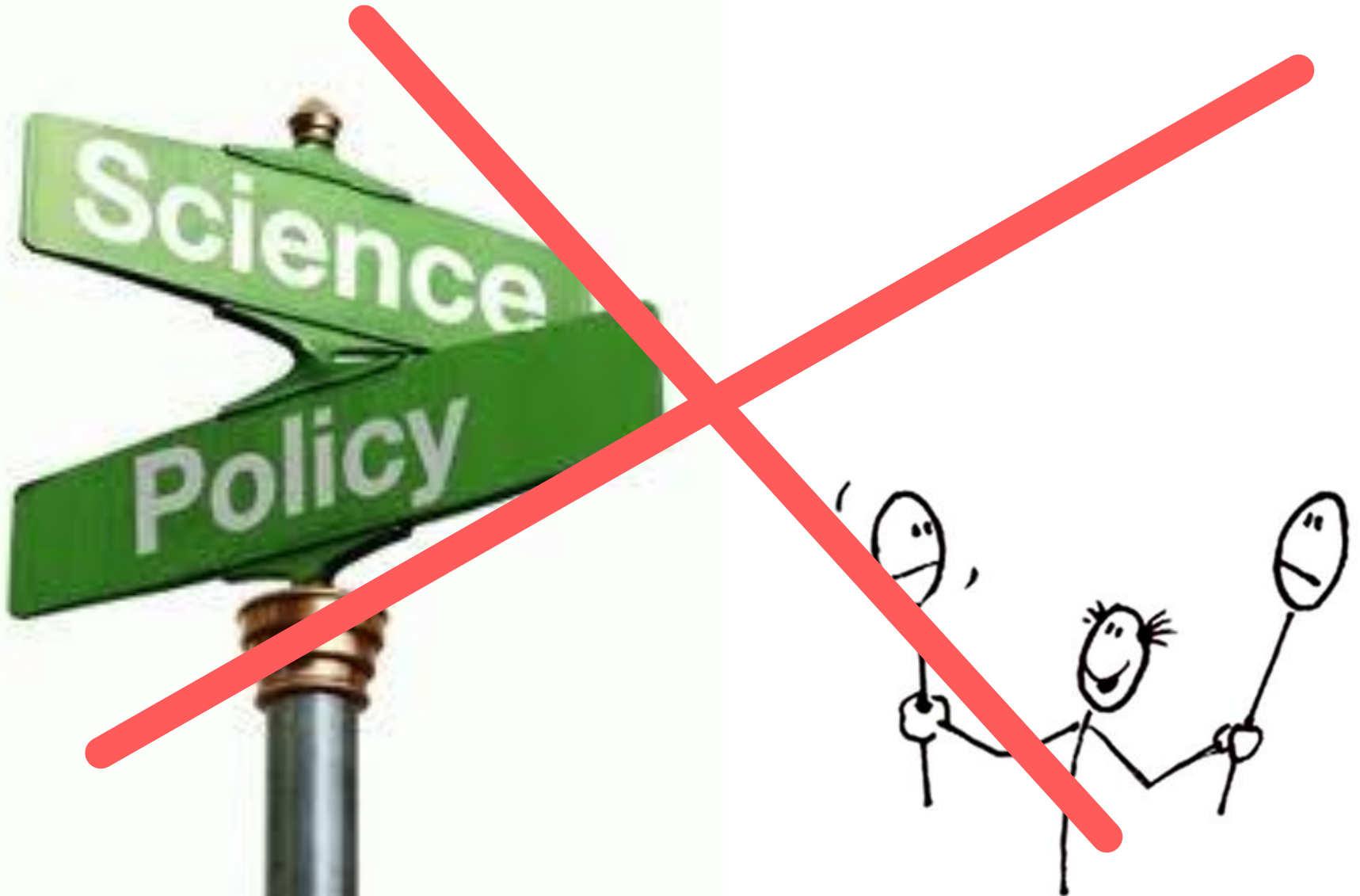
Good tool, proactive actions

Difficult to implement when
power balance among actors is too
unequal

Science-Policy Links in Social Power Games

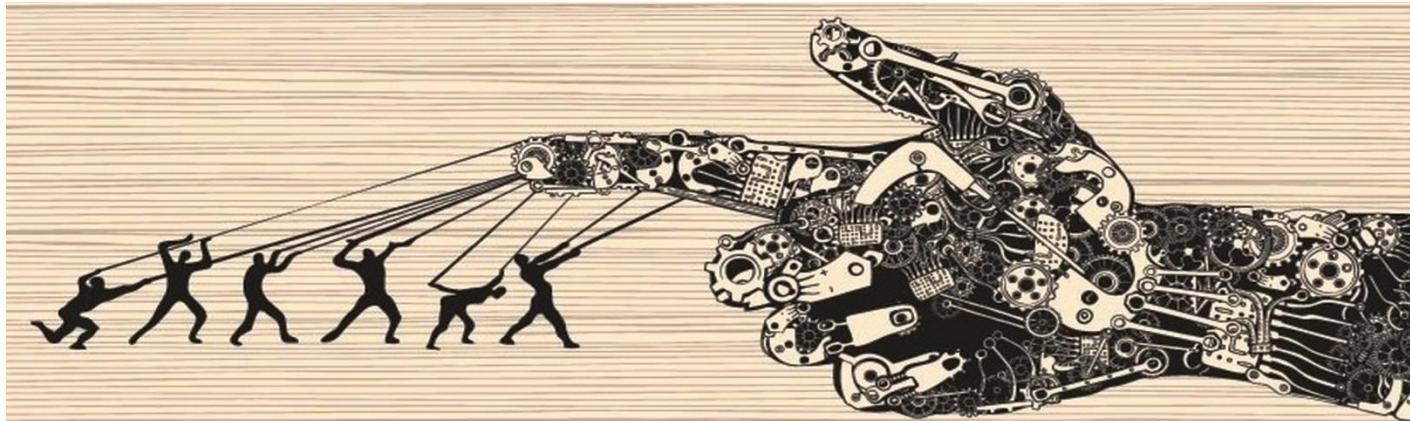


Science-Policy Links in Social Power Games



Science-Policy Links in Social Power Games

- ✓ Many stakeholders
- ✓ Conflicting interests, alliances, agendas
- ✓ The state shows several factions
- ✓ Scientists are one actor among others
- ✓ Turbulent processes blur scientific contributions
- ✓ Research uptake, but also « side-take » or « down-take »
- ✓ Not just providing evidence
- ✓ The context matters



Renewed Roles **Policy Makers**

- Scientific partners: some times political and scientific **objectives concur**
- Participation by all stakeholders is essential for sustainable policy-making. Frame problems and set de agenda to **include** scientists and others
- **Ask** for scientific knowledge: Research is more likely to be useful if it is commissioned by the policy-makers themselves, and if there are good feedback loops between, research, policy, implementation and monitoring.
- **Enhance** transformation capacity and **foster** your technical **capacities** by calling upon science.
- (Good) Science gives **legitimacy** to political actions.
- Do not ask for « **tailored** » science



Renewed Roles **Scientists**

- More focus on problem/solution oriented science
- **Interdisciplinarity** for better addressing complex issues
- **Transdisciplinarity** to involve stakeholders
- Take your time to understand the **context**: What are the opportunities and timing for input into formal processes?
- Get to **know the actors**, their interests, show them your science
- What is the **demand**? Knowledge? Methodology? Mediation?
- Understand the **agenda setting process** and get a sense of the opinion formation and decision-making timings. Fit the timings
- Don't be afraid to **engage directly** in decision making processes



Renewed roles **Donnors and Funding Agencies**

- **Relevance:** Model science so that knowledge produced matches policy needs
- Foster **inter/transdisciplinary problem/solution oriented** science
- Networking & partnerships: **Alliances** (within science and with other sectors and local organizations) increase policy relevance and impact.
- Understand **research uptake** from an integral perspective: Not only “up”, but also down, to the sides, indirect, not explicit,
- **Long-term support:** Long-term research programs have greater policy impact than short- short-term projects.
- **Education & capacity building**, as a long term essential base for adaptation (research “downtake”). Public opinion could mobilize politicians.



Questions

- What do I / we have to offer for glaciers conservation action?
- What is needed to advance in glaciers conservation?
- In which points we agree? Where are the disagreements?
- What are the spaces for social construction of a joint / consensual way of addressing glaciers conservation?
- Can we agree on a mechanism to work together systematically? Can we build a roadmap? Milestones?



Dra. Elma Montaña
emontana@dir.iai.int